

ABSTRACT

It is intended to provide a scaffold whereby a bone and a metallic material can three dimensionally form together a stereoscopic binding layer. Thus, a geometric space sufficient for cell actions is provided. As a result, the time required for the formation of a stereoscopic bond can be shortened and, moreover, a bond can be self-repaired owing to cell actions even in the case where a pair of the bond is injured by a wound, etc. As a material for designing a scaffold, titanium fibers of less than $100\mu\text{m}$ in size and having an aspect ratio of 20 or more are selected. Then these fibers are entangled together to form a layer which is integrally fixed by vacuum sintering to a periphery surface of the various implant bodies, and coated with apatite. The fact that the layer contains spaces of an excellent ability to induce a biological hard tissue and fix the same is proved by the material, in which the layer is fixed to the periphery of an implant.